

cial functional (?) requirements of the organism. It is these requirements that need further elucidation.

In conclusion, I wish to say this paper is intended to be only preliminary to a more extended series of observations on the points it discusses; and though it may seem a meagre production, I fancied that even such brief notes might claim notice by this Society.

I shall be very grateful to any one who will help me to obtain spirit specimens of the rarer birds, and especially of the genus *Picus*.

A List of Marine Shells, chiefly from the Solomon Islands, with Descriptions of several new Species. By EDGAR A. SMITH, F.Z.S., Zoological Department, British Museum. Communicated by Dr. J. MURIE, F.L.S.

[Read April 6, 1876.]

(PLATE XXX.)

THE shells enumerated in the following paper have been presented to the British Museum by Mr. John Brazier, of Sydney. A list of them was thought worthy of publication, as precise localities, in most instances, are attached to them, the majority having been collected by Mr. Brazier himself. At the same time, the habitats originally assigned to the various species by the authors are quoted, since so many which are given to species in the Cumingian collection are erroneous.

1. *CONUS MAGUS*, Linn. Kiener, *Coq. Viv.* pl. 67. f. 1-1 c; Reeve, *Conch. Ic.* f. 190 a-e; Sowerby, *Thesaurus Conch.* f. 508-512 & f. 513, 514, & 525 (as *C. circæ*); Weinkauff in *Küster's Conch.-Cab.* pl. 6. f. 1 & 3, pl. 15. f. 3, 4, pl. 19. f. 5, 6, pl. 57. f. 8-11.—Var. = *C. indicus*, Chemnitz, *Conch.-Cab.* x. f. 1295.—*C. clandestinus*, Chemnitz, *l. c.* f. 1296.—*C. circæ*, Chemnitz, *l. c.* xi. f. 1778-9.—*C. fenellus*, Chemnitz, *l. c.* xi. f. 1782-3; Küster, pl. 26. f. 12, 13.—*C. raphanus*, Hwass, Sowerby, *Thesaurus*, f. 494; Küster, pl. 2. f. 3.—*C. carinatus*, Swainson, Reeve, *Conch. Ic.* f. 175; Kiener, pl. 27. f. 2-2a; Sowerby, f. 495.—*C. ustulatus*, Reeve, f. 239; Sowerby, f. 516 & 647; Küster, pl. 52. f. 3, 4.—*C. epistomium*, Reeve, f. 227 a, b; Kiener, pl. 55. f. 6; Sowerby, f. 515.—*C. epistomioides*, Weinkauff, *Küster's Conch.-Cab.* pl. 57. f. 6-7.—*C. striolatus*, Kiener, pl. 105. f. 1; Reeve, *Suppl.* pl. 6. f. 262; Sowerby, f. 327, 328 (as *ustulatus*).—*C. borneensis*.

Sowerby (name preoccupied!), *Thesaurus*, f. 648.—*C. Frauenfeldi*, *Crosse, Journal de Conch.* 1865, vol. xiii. p. 307, pl. x. f. 1-10.—*C. assimilis*, *A. Adams, Proc. Zool. Soc.* 1853, p. 118; *Sowerby*, f. 505; *C. consul*, *Boivin, Journal de Conch.* 1864, vol. xii. pl. 1. f. 5, 6.

Hab. Strong Island, Caroline Group (*Brazier*).

This polymorphous species is almost as widely distributed, geographically, as it is variable in form and coloration. In the British Museum there is a very large series, consisting of about eighty examples, from various authentic localities, viz. Philippine Islands, Moluccas, Night Island, North Australia, Louisiade archipelago, Borneo, New Holland, New Guinea, and Madagascar.

Of the preceding pseudo-species the types of *epistomium* of Reeve, and *ustulatus* of the same author, *Frauenfeldi*, of Crosse, *assimilis* of A. Adams, and *borneensis* of Sowerby are in the national collection. The last-mentioned author appears to have overlooked the fact of having previously figured a species under the name of *borneensis*, which was originally described (in the Voyage of the Samarang) by A. Adams and Reeve. Weinkauff has erroneously placed Sowerby's species among the synonyms of *C. anemone*.

2. *CONUS VAYSSETIANUS*, *Crosse, Journ. de Conchyl.* 1872, xx. pp. 154 & 349, pl. xvi. f. 1; *Weinkauff, in Küster's Conchyl.-Cab.* pl. lxxi. f. 4.

Hab. New Caledonia.

The specimen sent by Mr. Brazier exhibits only the slightest trace of the white markings which are mentioned by Crosse as existing around the middle of the shell; and the colour is a bright orange rather than "castaneo-fusca."

3. *C. MONACHUS*, *Linn. Reeve, Conch. Icon.* f. 122 a-c; *Kiener*, pl. 50. f. 1-1a; *Sowerby*, f. 506, 507; *Küster*, pl. 34. f. 5, 6.—Var. = *Voluta cosmographia*, *Martyn, Univ. Conch.* iv. pl. 125. f. on right.—*C. achates*, *Meuschen*.—*C. achatinus*, *Chemnitz, Reeve*, f. 191a; *Kiener*, pl. 40. f. 1-1c, pl. 50. f. 1 c-d (as *monachus*, var.); *Sowerby*, f. 335, 336; *Küster*, pl. 5. f. 3 & 9.—*C. minimus*, *Gmelin (non Linn.)*, *Syst. Nat.* p. 3382.—*C. ranunculus*, *Hwass, Reeve*, f. 191 b.—*C. vinctus*, *A. Adams, Proc. Zool. Soc.* 1853, p. 118.

Hab. Solomon Island (*Brazier*).

Other localities for this species are Port Essington, Quail Island, and Paterson's Bay, N. Australia.

4. *TEREBRA CANCELLATA*, Quoy & Gaimard. Sowerby, *Thesaurus Conch.* i. pl. 44. f. 80; Reeve, *Conch. Ic.* vol. xii. f. 58 a-b.—*T. undatella*, Deshayes, *Proc. Zool. Soc.* 1859, p. 300.

Hab. Port Elliot, South Australia (*Brazier*), Philippine Islands (*Cuming*)

5. *PLEUROTOMA* (—?) *DIGITALE*, Reeve.—*Pl. digitale*, Reeve, *Conch. Icon.* i. f. 138.

Hab. San Christoval, Solomon Islands (*Brazier*), Philippine Islands (*Cuming*).

6. *P.* (—?) *BIJUBATA*, Reeve, *Conch. Icon.* i. f. 87 (bad).

Hab. San Christoval, Solomon Islands (*Brazier*); Philippine Islands (*Cuming*).

7. *P.* (—?) *SOLOMONENSIS*, sp. nov. Pl. XXX. fig. 6.

Testa fusiformis, subturrita, albida, inter costas strigis longitudinalibus nigro-fuscis et suturam infra punctis parvis fuscis ornata; anfractus 13, primi duo læves, cæteri infra suturam carina elevata marginati, infra carinam concavi, medio angulati, inferne decliviter contracti, costis 9-10 medio angulatis, superne versus carinam sensim evanescentibus instructi, et striis transversis 5-6 inter costas sculpti; anfr. ultimus versus basim attenuatus, costis inferne attenuantibus, pone labrum subdistantibus, et interdum aliis minoribus in interstitiis ad basim sitis instructus; apertura elongata, augustissima, alba, fusco longitudinaliter strigata, longitudinis testæ totius circiter $\frac{2}{3}$ æquans; labrum medio prominens, superne mediocriter, et prope basim levisime sinuatum; columella subrecta, haud arcuata, tenuiter callosa, ad suturam tuberculo subvalido munita; canalis angustus, paululum elongatus, rectiusculus, vix recurvus. Long. 23 mill., diam. $6\frac{1}{2}$.

Hab. San Christoval, Solomon Islands.

A young specimen of this species was presented to the British Museum, in 1874, by Mr. G. B. Sowerby, junior; and at the time I placed it, with doubt, as a variety of *varicosa*, Reeve. The second example, received from Mr. Brazier, being mature, proves that this form is distinct from Reeve's shell. It displays, at intervals, a slight tendency to varices, but not in such a marked manner as *varicosa*, from which it is well distinguished by the angular ribs, the more attenuated body-whorl, the dark brown stripes between the ribs, and the series of brown dots on the infrasutural keel, one spot being beneath each interstice between the ribs of the whorl above. The aperture in the present species is also narrower and longer, the columella straighter, and the canal rather more elongate. The ribs on the body-whorl near the base, and the interstitial ones between them, which sometimes

are present, are slightly nodulous, being traversed by the spiral sulcations.

8. *CYTHARA CITHARELLA*, Lamarck.—*Mangelia citharella*, Lamk., *Reeve, Conch. Icon.* f. 5.—*Cythara striata*, Schumacher, *Syst. Vers Test.* p. 245.—Var. = *Mangelia lyra*, *Reeve, l. c. f.* 3.—*M. funiculata*, *Reeve, l. c. f.* 7.

Hab. —? (*Brazier*); Philippine Islands (*Cuming*).

9. *C. CAPILLACEA*, *Reeve*.—*Mangelia capillacea*, *Reeve, l. c. f.* 10.

Hab. San Christoval, Solomon Islands (*Brazier*); Philippine Islands (*Cuming*).

10. *C. RETICULATA*, *Reeve*.—*Mangelia reticulata*, *Reeve, Conch. Ic.* iii. f. 17.

Hab. San Christoval, Solomon Islands (*Brazier*); Philippine Islands (*Cuming*).

11. *C. ZONATA*, *Reeve*.—*Mangelia zonata*, *Reeve, l. c. f.* 15.

Hab. San Christoval, Solomon Islands (*Brazier*); Philippine Islands (*Cuming*).

12. *C. UNILINEATA*, sp. nov. Pl. XXX. fig. 13.

Testa breviter fusiformis, dilutissime rufescens vel subalba, circa medium anfractuum albo zonata et infra zonam linea rufo-fusca costis interrupta cincta; anfractus ad 8, convexiusculi, costis 10 gracilibus supra spiram continuis, paululum obliquis (in anfr. ultimo fere ad basin continuis) instructi, et striis spiralibus confertis ubique sculpti; apertura elongata, angusta, longitudinis testæ $\frac{8}{15}$ adæquans; labrum costa ultima incrassatum, intus denticulis 11–12 ornatum, superne leviter sinuatum; columella leviter obliqua, haud arcuata, liris transversis circiter 15 munita. Long. 15 mill., diam. $4\frac{2}{3}$.

Hab. San Christoval, Solomon Islands.

This species must not be confounded with *C. zonata* of *Reeve*, said to inhabit the shores of the island of Ticao. In that species the ribs are produced upwards, and form an undulating coronation around the top of the whorls, and the reddish transverse band is continuous on and between the ribs, and not interrupted by them as in this species.

13. *C. INTERSTRIATA*, sp. nov. Pl. XXX. fig. 11.

Testa ovali-fusiformis, leviter turrata, alba, ad suturas et circa anfr. ultimi medium et prope basim nigro-fusco zonata; anfractus 8, supremi duo læves, cæteri convexiusculi, sutura profunda sejuncti, costis tenuibus 10 aliquanto obliquis (in anfr. ultimo basi continuis) instructi, liris spiralibus circiter 7 supra costas incrassatis (in anfr. ult. ad 18) et striis tenuissimis inter liras ornat; apertura parva,

angusta, longitudinis totius testæ $\frac{1}{2}$ æquans; labrum fortiter incrassatum, intus denticulos 10-11 gerens; columella rectiuscula granulis et liris transversis munita. Long. 8 mill., diam. fere 3.

Hab. San Christoval, Solomon Islands.

This is a very pretty species, and at once recognized by the deep-brown suture, the band encircling the middle of the body-whorl, which is continuous and not interrupted by the longitudinal ribs, and the paler band towards the base. The spiral lirations are almost equidistant, and slightly nodulous on traversing the costæ; and the fine striations between them are from two to four in number. The uppermost denticle within the labrum (that is, the one which borders the little sinus) is somewhat larger than the rest. The columella is furnished with numerous small tubercles and transverse lirations, somewhat irregularly situated, the former, however, being near the exterior margin of the thin callosity which spreads out on the columella, and the latter further within the aperture. This species has much resemblance to *Pleurotoma (Cithara) biclathrata* of Sowerbie, Journ. de Conch. xxi. p. 59, and may eventually prove to be but a large variety of it.

14. *CLATHURELLA IMMACULATA*, sp. nov. Pl. XXX. fig. 7.

Testa elongate acuminato-ovata, turrata, alba; anfractus 8, sutura distincta discreti, superne breviter tabulati, ad latera convexiusculi, costis tenuibus 14-15 et liris spiralibus 5 supra costas nodulosis pulcherrime cancellati; anfr. ultimus infra medium constrictus, costis inferne attenuantibus et liris spiralibus circiter 18 cinctus; apertura angustissima, tortuosa, longitudinis testæ quam $\frac{1}{2}$ paulo minor; labrum intus incrassatum, et denticulis 7-8 validis munitum ad suturam subprofunde sinuatum; columella medio haud arcuata sed paululum convexa, versus extremitatem obliqua, liris spiralibus circa caudam ornata; canalis perbrevis, angustissimus, leviter recurvus. Long. 8½ mill., diam. 3½.

Hab. Tarawa Island, Gilbert group.

This snow-white species has somewhat the form of *Pl. vultuosa*, Reeve. It is, however, rather longer in the body-whorl, the longitudinal ribs are more numerous and slender, and the spiral liræ are more distinct.

15. *FUSUS BRAZIERI*, sp. nov. Pl. XXX. fig. 16.

Testa fusiformis, turrata, alba, liris rufescenti-fuscis cincta; anfractus 8-9 superne anguste excavati, deinde convexi, costis crassis rotundatis ad 8 leviter obliquis superne versus suturam fere obsoletis instructi, et liris rufo-fuscis circiter 9 pulcherrime squamosis transverse cincti;

liræ inferiores 5-6 æquales aliis superioribus crassiores; anfr. ultimus liris spiralibus 23-25 cinctus, quarum duæ versus basim crassiores et fortiter imbricatæ, et infima circa rimam umbilicalem maxima; costæ inferne subobsoletæ; apertura ovalis, intus alba; columella arcuata, alba, tenuiter callosa; canalis obliquus, leviter recurvus, mediocriter angustus. Long. 44 mill., diam. 8.

Hab. — ?

The upper part of the whorls of this species is narrowly concave or excavated, and the spiral lirations on it are considerably finer than those below; and the stout rounded ribs are almost obsolete in this excavation. The lower part of the body-whorl has two rather distant lirations, which are very strongly imbricated where they cross the almost obsolete longitudinal ribs; and the margin of the narrow umbilical fissure is still more strongly imbricated. I feel much pleasure in naming this remarkable shell after Mr. Brazier, by whom it was presented to the Museum. I do not know of any species sufficiently closely allied to offer a comparison.

16. *FUSUS IMBRICATUS*, sp. nov. Pl. XXX. fig. 3.

Testa breviter fusiformis, crassiuscula, fusco-albida, longitudinaliter supra costas saturate fusco strigata; anfractus 5, superiores medio angulati et carina undulata prominente ornati, superne late et oblique declives, infra carinam recti, costis crassiusculis circiter 9 superne obliquis et versus suturam sensim attenuantibus instructi, liris paucis (supra angulum 5-6, eum infra circiter 3) pulcherrime imbricatis cincti; anfr. ultimus superne robustus, versus basim in caudam brevem contortam recurvam productus, rimatus, costis inferne obsoletis ad angulum tubercula compressa formantibus, et liris spiralibus imbricatis præcipue supra costas ornatus; apertura subovata intus albida; labrum margine crenulato intus liris intransitibus gracilibus ad 9 munitum; columella supra leviter arcuata, saturate fusca, infra contorta; canalis breviusculus, obliquus, angustus, recurvus. Longit. 27 mill., diam. 13.

Hab. New Caledonia.

This species is remarkable for the prominent undulating angulation or keel, which exists a little below the middle of the upper whorls and around the upper part of the body-whorl. The longitudinal ribs or varices are very much produced at this part, and form transversely compressed nodules, which give the shell a very elegantly festooned aspect when viewed with the apex towards the eye. The transverse lirations are very beautifully scaled or imbricated, particularly so upon the costations, and on the last

whorl are, at intervals, stouter than one or two in the interstices between them. The labrum is prettily crenulated on the margin; and the nine or ten white liræ within do not quite attain to it.

17. *PISANIA CRENILABRUM*, *A. Adams, Proc. Zool. Soc.* 1854, p. 138.

Hab. New Caledonia, "West Indies" (*Adams*); Moreton Bay (*coll. Cuming*).

There is not the slightest doubt of the identity of the New-Caledonian shell with the type of this species, which was described as an inhabitant of the West Indies; and therefore I should be inclined to consider the latter locality for this species erroneous, this being another of the very many instances of wrong habitats assigned to specimens described from the Cumingian collection.

18. *P. SOLOMONENSIS*, *sp. nov.* Pl. XXX. fig. 14.

Testa ovato-fusiformis, crassiuscula, alba, interrupte fusco bifasciata; anfractus 7, primi tres læves, cæteri costis longitudinalibus ad 15 et liris spiralibus 6-7 ubique granose reticulati, incrementi lineis striati; anfr. ultimus superne fascia fusca latissima interrupta et infra medium angustiore cinctus, et liris transversis granosis circiter 15 ornatus; apertura oblonga, alba, zonis externis fuscis variegata; labrum incrassatum, intus denticulis 5-6 munitum; columella lævis, callo tenui albo induta, medio rectiuscula, inferne obliqua et tortuosa; canalis brevis, angustus, recurvus. Long. 8 mill., diam. $3\frac{1}{4}$.

Hab. San Christoval Island, Solomon group.

This small species is chiefly to be distinguished by its granular surface and the style of coloration. The upper whorls are spotted in an irregular interrupted manner with brown; or, rather, at irregular intervals a longitudinal row or two of granules are brown; on the body-whorl the rows of granules are generally brown around the upper part, and two rows also just below the middle, thus forming two brown bands more or less interrupted.

19. *COLUMBELLA CAROLINÆ*, *sp. nov.* Pl. XXX. fig. 9.

Testa ovato-fusiformis, nitida, lutescens, strigis longitudinalibus irregularibus undulatis fuscis vel olivaceo-fuscis picta, paululum infra suturam linea interrupta nigro-fusca cincta et circa medium anfr. ultimi albo zonata; anfractus 8, convexiusculi, læves, sutura simplici discreti; anfr. ultimus medio obtusissime angulatus, inferne contractus, circa caudam striis spiralibus profundis circiter 11 insculptus; apertura parva, angusta, alba; labrum superne paululum infra suturam leviter sinuatum, margine simplici, extra valde tumide incrassatum, intus denticulato-liratum; columella tenuiter callosa, inferne sulcis circa

caudam denticulata; canalis angustus, recurvatus. Longit. 8 mill., diam. $3\frac{1}{4}$.

Hab. Strong Island, Caroline group.

The coloration of this pretty species is very characteristic. The ground-tint varies from white to yellowish; the spiral interrupted line is situated rather above the middle of the whorls; and the dark olive-brown lines or flammulations are very irregular and flow into one another, thus forming an irregular network. The ultimate whorl is encircled by a white zone at the obtuse angulation near its middle, and at the spiral interrupted line it is also very faintly keeled. The base of the columella is furnished with five or six nodulous lirations; and the tooth-like liræ within the labrum are about eight in number.

20. *ENGINA RECURVA*, *Reeve*.—*Ricinula recurva*, *Reeve*, *Conch. Icon.* iii. f. 53.

Hab. San Christoval, Solomon Islands (*Brazier*); Lord Hood's Island (*Cuming*).

The transverse liræ are three in number in the upper whorls, and about eleven in the last. On the labrum there are five or six denticles; and the middle of the columella is very prominent. The backward slope of the outer lip and canal is very remarkable.

21. *E. ZONATA*, *Reeve*.—*Ricinula zonata*, *Reeve*, *Conch. Icon.* iii. f. 33.

Hab. San Christoval, Solomon Islands (*Brazier*); Gallapagos Islands (*Cuming*).

If the Cumingian habitat be correct, then this species is very widely distributed. The shell from the Solomon Islands is yellow, with black bands, and the short black longitudinal stripes at the base are very constant, and the whole surface of the shell is minutely reticulated with the finest longitudinal and spiral striæ. The labrum is thickened within and without, and bears seven small teeth; and the columella is furnished with about twelve short transverse liræ.

22. *E. MONILIFERA*, *Pease*, *Proc. Zool. Soc.* 1860, p. 142.

Hab. San Christoval, Solomon Islands (*Brazier*); "Sandwich Is." (*Pease*).

The ribs on the last whorl of this species are about ten in number and are continuous to the base; and the spiral ridges, which are tubercular on crossing the ribs, amount to 9, including the row of the yellow tubercles beneath the suture. The nodules

of the fifth and seventh transverse liræ, reckoning from the suture, are also bright yellow, the upper ones being situated in the purplish band which encircles the whorl, and the lower ones just beneath it; and in specimens from the Sandwich Islands those of the fifth, sixth, and seventh series are yellow.

23. *NASSA BICALLOSA*, sp. nov. Pl. XXX. fig. 1.

Testa acuminato-ovata, turrita, sordide albida, infra suturam et supra tergum livida; anfractus 10, superiores longitudinaliter oblique costati et paululum infra suturam linea impressa spirali sulcati, inferiores supra coronati, læves; anfr. ultimus magnus, lævis, coronatus, linea incisa superne haud cinctus, circa basim striis transversis 10-12 insculptus; sutura profunda, canaliculata; apertura subovata, intus albida vel pallide fuscescens ad suturam et basim, et paululum labri margine saturate fusco cincta vel zonata; labrum margine tenue, inferne denticulis, superne ad suturam subprofunde incisum, extra alborvaricosum, intus denticulo-liratum; columella valde arcuata, callo crassiusculo superne subtuberculato inferne dentiformi, producto amicta, et supra callum, callo crenulato secundo notabili ornata; canalis brevissimus, mediocriter latus. Long. 24 mill., diam. 12.

Hab. West Australia, (*Brazier*); Swan River, Cape Natal.

This species somewhat resembles *N. algida*, Reeve; but there are several peculiarities which well distinguish it from that form. The spiral striation which encircles the upper whorls does not extend to the last. The tubercles forming the coronation gradually enlarge as the whorls increase. The most remarkable peculiarity in this species is the second callosity upon the columella. It is parallel with the margin of the other, is crenulated or dentate, and extends upward and curves inwards within the aperture upon the wall of the body-whorl; and the lower end of the columella stands out in the form of a prominent callous tooth. The slit in the sutural end of the labrum forms, with the tubercular callosity of the columella, a narrow well-defined sinus. The interior of the aperture is usually whitish or brownish white; but along the suture, and around the base, and in a line with the margin of the labrum, at a little distance from it, it is stained or striped with very deep brown. The lirations within the lip are about twelve in number, and do not quite extend to the margin of it.

24. *N. MARRATII*, sp. nov. Pl. XXX. fig. 4.

Testa ovata, superne acuminata, albida vel flavescens, maculis irregularibus rufo-fuscis picta et lineis spiralibus rufo-fuscis cincta: anfractus

8-9, levissime convexi, primi duo læves politi, sequentes 2-3 longitudinaliter oblique plicati transversimque sulcati, ultimi duo læves, ultimus circa basim striis transversis subdistantibus insculptus; apertura parva, ovata, intus fuscescens, prope labri marginem alba; columella medio arcuata callo tenui polito supra anfractum expanso induto, superne versus labrum tuberculo elongato parvo munita, ad basim transversim 2-3-plicata; labrum album, fortiter incrassatum, margine tenui, intus liris brevibus circiter 9 haud ad marginem productis armatum; canalis brevis angustus. Long. $14\frac{1}{2}$ mill., diam. 6.

Hab. San Christoval, Solomon Islands. Collected above high water (*Brazier*).

The colour of this species is somewhat variable. There are two varieties, a dark and a pale one. The former is whitish, with numerous reddish brown blotches or irregular stripes, and with the spiral lines of the same colour, five or six on the penultimate whorl and about fourteen on the last, the four or five lowest ones running in the striæ around the base. The paler variety is yellowish, with very pale brown irregular blotches and stripes. In all specimens the upper part of the last three whorls at the suture is slightly crenulated and spotted with dark reddish brown and white, and the three or four apical volutions are of a uniform brown colour. *N. gaudiosa*, of Hinds, is its nearest ally, from which it may be distinguished by its smaller size, narrower form, and difference of coloration. It is with pleasure that I join to this species the name of my friend Mr. F. Marrat, of Liverpool, who is now engaged upon a monograph of this genus.

25. *NASSA BIFARIA*, *Baird*, 'The Cruise of the Curaçoa' (*Brenchley*), 1873, p. 436, pl. 38. f. 1, 2.

Hab. New Caledonia.

26. *N. STIGMARIA*, *A. Adams*, *Proc. Zool. Soc.* 1851, p. 96; *Reeve*, *Conch. Icon.* viii. f. 42 a, b.

Hab. New Caledonia (*Brazier*); Philippine Islands (*Cuming*); Japan (*Capt. St. John*).

Specimens in the Museum from the above localities agree almost precisely in every particular.

27. *N. CURTA*, *Gould*, *Proc. Boston Soc. Nat. Hist.* iii. 1849; *Otia Conchol.* p. 69.

Hab. Strong Island, Caroline group (*Brazier*); Samoa Islands (*Gould*).

28. *N. ECHINATA*, *A. Adams*, *Proc. Zool. Soc.* 1851, p. 101; *Reeve*, *Conch. Icon.* viii. f. 131.

Hab. New Caledonia (*Brazier*); Philippine Islands (*Cuming*).

29. *NASSA TRINODOSA*, sp. nov. Pl. XXX. fig. 2.

Testa globoso-conica, crassiuscula, livido-cinerea, fascia angusta utrinque fusco marginata vel lineata ornata; anfractus 8 sutura subprofunda undulata sejuncti, infra eam fortiter marginati et leviter excavati, paululum supra medium aliquanto angulati, deinde convexiusculi, costis ad 10 subobliquis, mediocriter tenuibus, superne attenuantibus ad angulum acute nodosis instructi, et liris spiralibus 4-6 inter supraque costas continuis ornati; anfr. ultimus infra angulum superiorem concavus et triangulatus, costis longitudinalibus ad angulos duos nodosis et infra angulum infimum obsolete instructus, liris transversis circiter 20 cinctus; apertura parva irregulariter ovata fuscescens, zona alba externa fasciata; labrum margine tenui extra intusque incrassatum versus basim haud profunde sinuatum, intus album liris tenuibus albis 6-7 armatum; columella arcuata callo mediocriter crasso inferne incrassato amicta, superne tuberculo parvo munita; canalis angustus. Long. 13 mill., diam. 7.

Hab. San Christoval, Solomon Islands.

The margination of the whorls beneath the suture is very decided, and in some specimens appears to consist of the two uppermost spiral lirations. It is remarkable that the upper whorls below the superior angle are convex, whilst the last is concave. The ribs on the body-whorl are noded in three places, the nodules not being very prominent, particularly the two lower ones. The middle one is situated about the centre of the whorl, and the lowest one only at a little distance below it and not so remote as the uppermost. *N. coronula*, A. Adams, is of very much the same form as this; but its much thicker costations, finer transverse lirations, and the absence of the keel-like margination beneath the suture at once define its distinctness.

30. *N. INTERLIRATA*, sp. nov. Pl. XXX. fig. 5.

Testa parva, acuminato-ovata, saturate fusca, infra suturam nigrescens; anfractus 7, leviter convexi, superiores tres læves politi, cæteri costis arcuatis vel flexuosis confertis circiter 24 et liris spiralibus tenuibus 5-6 inter costas ornati; anfr. ultimus liris spiralibus 18-19 ornatus; liræ infimæ 4 circa caudam brevissimam fere contiguæ; apertura parva ovata, intus fusca; labrum extra late varicosum, intus denticulis 7 munitum, versus basim haud profunde sinuatum; columella callo tenui induta, arcuata, superne tuberculum parvum elongatum gerens; canalis brevissimus, angustus. Long. $6\frac{1}{2}$ mill.; diam. $3\frac{1}{3}$.

Hab. San Christoval, Solomon Islands.

This is very distinct from any species hitherto described. The dark uniform brown colour, except just beneath the suture (where a

somewhat blackish tinge prevails), the very numerous flexuous ribs and fine spiral liræ are the chief characteristics. The last mentioned do not cross the longitudinal ribs; and around the top of the whorls the first liration below the suture is somewhat remote from it; and also two which encircle the body-whorl near its middle are rather further apart than the others, thus leaving the series of little pits between them somewhat larger than those between the other liræ. *Nassa Wilsoni*, C. B. Adams, from Panama, is the only species which bears any relationship to the present; but there are many distinctive differences between them.

31. *NASSA DELICATA*, *A. Adams, Proc. Zool. Soc.* 1851, p. 99; *Reeve, Conch. Icon.* viii. f. 180, *a, b.*

Hab. New Caledonia (*Brazier*); Philippine Islands (*Cuming*).

32. *N. CALLOSPIRA*, *A. Adams, Proc. Zool. Soc.* 1851, p. 102; *Reeve, Conch. Icon.* viii. f. 66, *a, b.*

Hab. San Christoval, Solomon Islands (*Brazier*); Philippine Islands (*Cuming*).

33. *N. PUPINOIDES*, *Reeve, Conch. Icon.* viii. f. 162.—*Aciculina striata*, *A. Adams, Proc. Zool. Soc.* 1851, p. 114.

Hab. San Christoval, Solomon Islands (*Brazier*); Philippine Islands (*Cuming*).

Reeve describes the colour of this species as "light brown, encircled with a pale band;" and his figure is tinted a dirty olive, with a bluish band beneath the suture. Neither of these colourings is quite accurate. The type is of a pale purplish horn-colour, the upper whorls with a single pale band round the middle, and the body-whorl with three such zones; the labrum is somewhat thickened, and armed with about seven denticles; the columella is stained with brown, with a small tubercle above, and on that of the Solomon-Island specimen there are one or two at its base.

34. *N. MÆSTA*, *Hinds, Voy. Sulphur*, p. 36, pl. 9. f. 18, 19.

Hab. San Christoval, Solomon Islands (*Brazier*); Gulf of Papagayo, west coast of Central America! (*Hinds*).

There is another remarkable instance of wide geographical distribution, supposing both the above localities to be correct. Of the identity of this specimen from the Solomon Islands with examples from Central America there is not the shadow of a doubt. It has been compared with typical examples of *mæsta* received from Sir Edward Belcher and labelled in Hinds's handwriting, and in no respect differs from them. The number of the whorls should

be eight, and not six (as described by the author of the species), the three apical ones being smooth, convex, and glossy. The colour also is rather blue slate-colour than "blackish;" and the upper edge of the whorls at the suture is dirty white or yellowish, and a little below it there is a slender, obscure, reddish spiral line. The aperture is very dark rich brown and small; the labrum much thickened, with two pale spots on the exterior, thinnish at the edge, and furnished with four or five denticles within; the columella arcuate, clothed with a brown callus, which is rather broadly reflexed, and provided with a single tooth above and one at the base. The longitudinal plications on the body-whorl are from 20-24 in number, and become somewhat obsolete towards the base, where the transverse fine liræ are not granulous on crossing them as above and on the whorls of the spire (where the number is from five to six); and between these lirations there are very fine spiral striæ.

35. *PURPURA BUCCINEA*, *Deshayes, Anim. sans Vert.* ed. 2, vol. x. p. 92; *Reeve, Conch. Icon.* iii. f. 16, a, b.—*Purpura striata*, *Quoy & Gaimard, Voy. Astrolabe*, pl. 37. f. 12, 13; *Kiener, Coq. Viv.* pl. 38. f. 88.

Hab. Makeira Harbour, San Christoval, Solomon Islands (*Brazier*); "New Guinea" (*Quoy*).

36. *VEXILLA FUSCO-NIGRA*, *Pease, Proc. Zool. Soc.* 1860, p. 141.

Hab. San Christoval, Solomon Islands (*Brazier*); "Sandwich Islands" (*Pease*).

The colour of this species differs somewhat from Pease's description, the tubercles of the spiral ribs being yellowish edged with black, and the interstices between them bluish ash-colour.

37. *SISTRUM ANAXARES*, *Duclos*.—*Purpura anaxares*, *Duclos, Kiener, Coq. Viv.* p. 26, pl. 7. f. 17; *Reeve, Conch. Icon.* iii. pl. 12. f. 61.

Hab. San Christoval, Solomon Islands (*Brazier*); Lord Hood's Island (*Cuming*).

38. *LATIRUS USTULATUS*, *Reeve*.—*Turbinel laustulata*, *Reeve, Conch. Icon.* iv. f. 62.

Hab. San Christoval, Solomon Islands (*Brazier*).

The locality of this species has not, I believe, been hitherto recorded.

39. *MITRA CÆRULEA*, *Reeve, Conch. Icon.* ii. f. 113.

Hab. San Christoval, Solomon Islands (*Brazier*); Philippine Islands (*Cuming*).

This species is described and figured by Reeve as being encir-

bled by "a broad blue band" around the last whorl. In the specimen from the Solomon Islands this band is of a brown colour.

40. MITRA FLAMMEA, Quoy & Gaimard, *Voy. Astrolabe*, pl. 45 bis. f. 23-25; Reeve, *Conch. Icon.* ii. f. 120.

Hab. San Christoval, Solomon Islands (*Brazier*); Philippines (*Cuming*).

41. M. QUOYI, *Deshayes*.—*M. nigra*, Q. *Voy. Astrolabe*, pl. 45. f. 16-18; Reeve, *Conch. Icon.* ii. f. 109; Kiener, *Coq. Viv.* pl. 12. f. 37.

Hab. San Christoval, Solomon Islands.

I am by no means confident that the species figured above are identical. Quoy describes his shell with three plaits on the columella, and Reeve four. The species of the latter author, when in a good state of preservation, is clothed with a very thin dirty olive epidermis, and is encircled with rather distant spiral series of shallow punctures. The specimen from the Solomon Islands agrees with the latter variety.

42. M. (ZIERLIANA) ANTHRACINA, Reeve, *Conch. Icon.* ii. f. 137.

Hab. San Christoval, Solomon Islands (*Brazier*); "Philippine Islands" (*Cuming*).

The liræ within the labrum are very fine, thread-like, and about fifteen in number.

43. M. (ZIERLIANA) CRENICPLICATA, A. Adams, *Proc. Zool. Soc.* 1851, p. 139.

Hab. San Christoval, Solomon Islands (*Brazier*).

The locality of this species is not quoted by its describer. The specimen sent by Mr. Brazier is 17 millim. long and $6\frac{1}{2}$ in width; and the lirations within the aperture are twelve in number, some of them extending much further inwards than others.

44. M. (TURRICULA) RUFOFILOSA, sp. nov. Pl. XXX. fig. 10.

Testa ovato-fusiformis, turrita, saturate olivaceo-fusca, circa partem inferiorem anfract. superiorum et paululum supra medium anfr. ultimi zona alba medio linea rufa bipartita ornata; anfractus 11 sutura profunda discreti, subplani, costis parum obliquis 14 instructi, et sulcis profundis 5-6 præcipue inter costas, spiraliter sculpti; anfr. ultimus sulcis transversis circiter 21, paucis ad basim profundissimis ornatus et costis longitudinalibus inferne attenuantibus et granosis; apertura subangusta, longitudinis testæ quam $\frac{1}{2}$ paulo minor, nigro-fusca albo fasciata, intus tenuiter lirata; columella obliqua, plicis albis 4 munita, superne tuberculum parvum gerens; canalis angustiusculus leviter recurvus. Long. $18\frac{1}{2}$ mill., diam. 7.

Hab. San Christoval, Solomon Islands.

This is a very pretty species and easily recognizable by its style of coloration. The white band, which is bisected exactly in the middle by the red thread-like line, occupies about the lower half of the whorls. The ribs are sharpish at their edge, and of a lighter colour there than the interspaces, and contiguous to one another at the base; those of the last whorl are somewhat attenuated inferiorly, and nodulous where they are traversed by the six or seven broad deep sulci, the nodules being of a pale horny colour. The very fine lirations within the aperture are about twelve in number.

45. MITRA (TURRICULA) ANTONELLII, *Dohrn, Proc. Zool. Soc.* 1860, p. 367.

Hab. San Christoval, Solomon Islands (*Brazier*); "Philippine Islands" (*Dohrn*).

46. M. (TURRICULA) LIGATA, *A. Adams, Proc. Zool. Soc.* 1851, p. 134.

Hab. San Christoval, Solomon Islands (*Brazier*); "Philippine Islands" (*Adams*).

This species is 17 millim. long and $5\frac{1}{3}$ broad.

47. M. (TURRICULA) OBELISCUS, *Reeve, Conch. Icon.* ii. f. 107.

Hab. San Christoval, Solomon Islands (*Brazier*); Philippine Islands (*Cuming*).

48. M. (TURRICULA) CRUENTATA, *Chemnitz, Reeve, Conch. Icon.* ii. f. 126.

Hab. San Christoval, Solomon Islands (*Brazier*); Philippine Islands (*Cuming*).

49. M. (TURRICULA) SEMIFASCIATA, *Lamarck, Reeve, Conch. Icon.* ii. f. 131, *a, b*.

Hab. San Christoval, Solomon Islands (*Brazier*); Philippine Islands (*Cuming*).

50. M. (TURRICULA) DISCOLORIA, *Reeve, Conch. Icon.* ii. f. 230.

Hab. San Christoval, Solomon Islands (*Brazier*).

The habitat of this very pretty species has not hitherto been recorded.

51. M. (TURRICULA) DESHAYESII, *Reeve, Conch. Icon.* ii. f. 170.

Hab. San Christoval, Solomon Islands (*Brazier*); " — ?" (*Reeve*).

The shell from the above islands differs somewhat in coloration from the typical form. It is broadly black-banded beneath the orange tips of the ribs in the upper whorls; and the last is entirely blackish brown interrupted by three yellowish zones, the uppermost one adjoining the suture, the median one near that region of the

whorl, and the lowest a little below it. Reeve describes the whorls as being smooth beneath the orange nodules. The shell before me is longitudinally broadly ribbed, the upper extremities being somewhat thickened, but scarcely nodulous. They do not extend quite to the base of the body-whorl.

52. MITRA (TURRICULA) LUBENS, *Reeve, Conch. Icon.* ii. f. 331.

Hab. San Christoval, Solomon Islands (*Brazier*); Philippine Islands (*Cuming*).

53. M. (TURRICULA) NODULIFERA, *A. Adams, Proc. Zool. Soc.* 1851, p. 141.

Hab. San Christoval, Solomon Islands (*Brazier*); " — ? " (*Adams*).

The length of the specimen from the above locality is $11\frac{1}{2}$ mill., and its diameter 4. Its ground-colour is pale pinkish; and the ribs are white, especially at the nodulous ends, and the interior of the aperture orange.

54. M. (TURRICULA) FICULINA, var. Pl. XXX. fig. 12.

Mitra ficulina, Lamk. Anim. sans vert. ed. 2, vol. x. p. 336; *Kiener*, pl. 27. f. 86; *Reeve*, f. 141.

Testa ovata, turrita, brevis, lata, saturate chocolato-fusca; anfractus 9? (apice fracto), sutura profunda sejuncti, costis obliquis crassiusculis (in anfr. ultimo 13 versus basim fere obsolete) instructi, et sulcis spiralibus circiter 6 distantibus (in anfr. ult. 15-16, quorum 2-3 paululum ante basim latissimi et profundi) sculpti; apertura pallide lilacea, longitudinis testæ $\frac{1}{2}$ paulo superans, longe intus liris filiformibus circiter 12 armata; columella tenuiter callosa superne tuberculata, plicis obliquis 4 munita; canalis medioeris, leviter recurvus. Long. $15\frac{1}{2}$ mill., diam. $7\frac{2}{3}$.

Hab. San Christoval, Solomon Islands.

This specimen is remarkable for its short ovate form and uniform dark chocolate-brown colour. The ribs on the body-whorl are much attenuated at the base, and are made nodulous by being traversed by the few deep and broad sulcations which exist around that portion of the whorl.

55. M. (PUSIA) CUMINGII, *Reeve, Conch. Icon.* ii. f. 67.

Hab. San Christoval, Solomon Islands (*Brazier*); "Philippine Islands" (*Cuming*).

The interstices between the transverse ridges are described by Reeve as "deeply impressed;" but in the specimen sent by *Brazier* they are deeply elongately punctured between the longitudinal costations, especially on the spire and the upper half of the body-whorl; on the lower portion they are less deep. The short cauda of this whorl is bright orange; and the aperture is pale buff.

56. MITRA (PUSIA) GRÆFFEL, *Crosse, Journal de Conch.* xv. p. 297.

Hab. San Christoval, Solomon Islands.

57. TRITONIUM (EPIDROMUS) DIGITALE, *Reeve*.—Tritonium digitale, *Reeve, Conch. Icon.* ii. f. 86.

Hab. Strong Island, Caroline Group (*Brazier*); Philippine Islands (*Cuming*); Marquesas Islands (*Pease*).

“The close-set obtuse granules” with which the whorls are described by *Reeve* as being covered, are situated upon somewhat oblique ribs, which are 24 on the body-whorl. The columella is straight in the middle and oblique in the region of the canal; it is smooth and coated with a callosity which is very well defined. The canal is narrow, deep, and recurved; and the labrum is thickened and furnished with about 7 teeth within. The length is 13 millim., width $4\frac{1}{2}$.

58. TRITONIUM (EPIDROMUS) TRUNCATUM, *Hinds, Voy. Sulphur*, pl. 4. f. 9, 10; *Reeve, Conch. Icon.* ii. f. 83.

Hab. San Christoval, Solomon Islands (*Brazier*). “New Ireland” (*Hinds*); “Philippine Islands” (*Cuming*).

59. TRITONIUM (EPIDROMUS) BRACTEATUM, *Hinds, Voy. Sulphur*, pl. 4. f. 5, 6; *Reeve, Conch. Icon.* ii. f. 84.

Hab. San Christoval, Solomon Islands (*Brazier*); “Marquesas Islands” (*Hinds*); “Philippine Islands” (*Cuming*).

60. RECLUZIA? GLOBOSA, sp. nov. Pl. XXX. fig. 8.

Testa globosa, tenuis, imperforata, albida, pallide fusco strigata; anfractus 5 convexi, sutura simplici discreti, incrementi lineis ubique arcuatis superne ad suturam leviter squamose elevatis ornati, et spiralter levisime striati; anfr. ultimus magnus, ventricosus, ad regionem umbilicalem albus; apertura lunato-circularis, magna, longitudinis totius circiter $\frac{2}{3}$ æquans; columella perarcuata, leviter incrassata, alba, callo tenui labro juncta. Long. $11\frac{1}{2}$ mill., diam. anfr. ultimi supra aperturam 7; aperturæ long. 8, diam. 6.

Hab. Tarawa, Gilbert Group.

I am very doubtful with regard to the correct position of this species. It seems to have some relationship to *Natica* as well as to *Recluzia*. From the former it differs in the absence of an umbilicus and in its light construction, and from the latter in the arcuate columella. The spiral striæ are very close together, very faint and wavy. The lines of growth beneath the suture, especially in the last whorl, are elevated in a scale-like manner. Probably this shell has been invested by a thin epidermis which has been worn off by being rolled on the beach, where two specimens were picked up by Mr. *Brazier*.

61. *LITTORINA MELANACME*, sp. nov. Pl. XXX. fig. 21.

Testa ovata, ventricosa, ad apicem acuta et nigrescens, albida vel cæruleo-albida lineis tenuibus fuscis radiantibus numerosis irregulariter picta; anfractus 6 convexi, striis spiralibus paucis sculpti; anfr. ultimus infra suturam et præcipue versus labrum aliquanto depressus, ad peripheriam inconspicue obtuse angulatus, striis transversis circiter 20 (paucis ad basim quam cæteræ majoribus) ornatus; apertura subsemicircularis, intus saturate fusca, fascia lutea basali ornata; labrum margine luteo fusco lineato; columella obliqua, fere rectilinearis, leviter excavata, fusca. Long. $9\frac{1}{2}$ mill., diam. 5.

Hab. San Christoval, Solomon Islands.

This species is allied to *L. Novæ-Zelandiæ* of Reeve, and differs only in the following particulars: it is smaller, not quite so globose in form, of a bluish-white tinge, and with a dark apex; the longitudinal lines are cut across by the spiral striæ, and thus have a dotted appearance. In *L. Novæ-Zelandiæ* the apex is pale, the ground-colour is opaque white, and the reddish lineations are very faint, and the spiral striæ are rather finer than in the present species. The aperture of the latter is much darker in colour, the edge of the outer lip is pale and dotted with short brown lines, and the columella is brown and not so broadly excavated as that of Reeve's shell.

62. *RISELLEA TANTILLA*, Gould.—Trochus tantillus, Gould, *Proc. Boston Soc. Nat. Hist.* 1849, vol. iii. p. 118; *Otia Conchol.* p. 59.

Hab. Bonham Island, Marshall group (*Brazier*); Sandwich Islands (*Gould*).

This species appears to vary very much in height. It was originally described as possessing a depressed spire; but usually it is shortly conical. The angulation of the whorls is very faint in some examples and situated about the middle of the whorls. The shells from the Marshall Islands are small, with the spire much elevated, the radiating flexuous brown lines being wanting, and the base is furnished with five instead of two spiral lirations as described by Gould. The interior of the aperture is not pearly as in the Trochidæ; and yet the operculum truly appertains to that family, being concentric and multispiral; and although therefore differing from that of *Risella*, the shell itself appears to suggest the propriety of its being located with that genus rather than with the Trochidæ.

63. *PLANAXIS VIRGATUS*, Smith, *Annals & Mag. Nat. Hist.* 1872, vol. ix. p. 44.

Hab. San Christoval, Solomon Islands (*Brazier*).

Other specimens in the British Museum are from the Fiji Islands and New Caledonia.

64. *RISSOINA CLATHRATA*, *A. Adams, Proc. Zool. Soc.* 1851, p. 265; *Schwartz von Mohrenstern's Monograph, Denkschrift. Akad. Wissenschaft. Wien*, 1861, vol. xix. pt. 2, p. 154, pl. vi. f. 49.

Hab. Strong Island, Caroline group (*Brazier*); Philippine Islands (*Cuming*); New Holland (*Paris Museum, teste Schwartz*).

The spiral liræ in the upper whorls are three in number, and twice as many in the body-whorl, the lowest one being very thick, indeed double as thick as the others; the longitudinal costations or lirations are about eighteen, somewhat obliquely arcuate and minutely nodulous at the points of junction with the transverse liræ. The length of the largest Philippine specimen is 12 millim., diameter $3\frac{1}{2}$. The shells from the Caroline Islands are much smaller, being only 7 mill. long and $2\frac{1}{3}$ broad.

65. *R. CANALICULATA*, *Schwartz von Mohrenstern's Monograph, Denkschrift. Akad. Wissenschaft. Wien*, 1861, vol. xix. pt. 2, p. 123, pl. ii. f. 18.

Hab. San Christoval, Solomon Islands (*Brazier*); Philippine Islands (*Schwartz*).

This species is very closely related to the *R. scalariana* of A. Adams, from which it chiefly differs in its larger size and more numerous ribs.

66. *R. MYOSOROIDES*, *Récluz, var., Schwartz von Mohrenstern, Denksch. Akad. Wissenschaft. Wien*, 1861, vol. xix. pt. 2, p. 134, pl. iv. f. 30.

Testa cylindraco-ovata superne acuminata, alba (interdum circa medium anfractuum obscure roseo tineta); anfractus $8\frac{1}{2}$, apicales $2\frac{1}{2}$ læves convexi vitrei, cæteri convexiusculi, sutura parum obliqua sejuncti, costis aliquanto arcuatis et obliquis circiter 17, et spiraliter minutissime striati; anfr. ultimus costis flexuosis ad basim continuis et dimidio infero liris spiralibus tenuibus inter costas cineto; apertura obliqua, mediocris; labrum extra late incrassatum et costulis tenuibus ornatum; columella medio paululum arcuata tenuiter callosa; canalis mediocriter profundus, obliquus. Long. $5\frac{1}{2}$ mill., diam. 2.

Hab. San Christoval, Solomon Islands (*Brazier*); Mauritius (*Schwartz*).

The ribs on the body-whorl are rather more numerous than on the upper whorls, and gradually more slender as the labrum is approached, three or four being situated on the thickening without it. I have given the above description, as the specimens from the Pacific offer a few slight differences from the examples found at the Mauritius. In the former only two or three of the apical

whorls are smooth, whilst in the latter six are sculptureless. The ribs of the Solomon-Islands examples are rather fewer, and the whole shell is a trifle larger.

67. *RISSOINA TEREBOIDES*, sp. nov. Pl. XXX. fig. 19.

Testa breviter subulata, solidiuscula, albida, circa medium anfractuum fusco zonata et supra partem inframedianam fusco tincta; anfractus 10? apicales abrupti, reliqui 7 convexiusculi, costis obliquis 11-12 medioeriter crassis, leviter arcuatis instructi, ubique minutissime spiraliter striati; anfr. ultimus infra medium longe crassius striatus, costas haud ad basim productas gerens; apertura parva obliqua alba; labrum extra fortiter et late varicosum; columella obliqua, leviter arcuata, callo tenui induta; canalis haud profundus sed distinctus. Long. $8\frac{1}{2}$ mill., diam. $2\frac{2}{3}$.

Hab. San Christoval, Solomon Islands.

The shortly subulate form, the stoutish oblique ribs, the most minute spiral striation and the much coarser striæ around the base of the last whorl, and the style of colouring are the chief characteristics of this species.

68. *CERITHIUM COLUMNA*, Sowerby, 'Genera of shells' No. 42, f. 7; *Thesaurus Conch.* ii. pl. 178. f. 56-58; *Reeve, Conch. Icon.* xv. f. 2, a, b.

Hab. San Christoval, Solomon Islands (*Brazier*); Philippine Islands (*Cuming*).

69. *C. ARMATUM*, *Philippi, Abbild. u. Beschr. Conchylien*, vol. iii. pl. i. f. 9; *Sowerby, Thesaurus*, ii. pl. 179. f. 68; *Reeve, Conch. Icon.* xv. f. 14, a, b.

Hab. San Christoval, Solomon Islands (*Brazier*); Philippine Islands (*Cuming*).

70. *C. PLANUM*, *Anton, Philippi, Abbild. und Beschreib. Conchyl.* iii. p. 19, pl. i. f. 18; *Sowerby, Thesaurus Conch.* ii. pl. 181. f. 111-113; *Reeve, Conch. Ic.* xv. f. 79.—Var. = *C. balteatum* (*Philippi?*), *Sowerby, l. c.* f. 116, 117; *Reeve, f. 72, a, b.*

Hab. San Christoval, Solomon Islands (*Brazier*); Philippine Islands (*Cuming*).

The chief difference between this species and the variety *balteatum* is, that it is rather smoother, and rather more deeply pitted between the longitudinal costations. Both forms have the black apex and the orange or brown base, *balteatum* having a band at the base of the upper whorls, which passes round the last one a little above the middle. This zone is not present in the typical *planum*; but there are three specimens of a variety of it in the

Museum which have it exactly similar to that of *balleatum*. There is some doubt with regard to the identity of the shell described and figured by Philippi with that of Sowerby & Reeve. Philippi does not mention the dark apex, nor does he describe his shell as being coloured at the base.

71. *CERITHIUM CORONATUM*, Sowerby, *Thesaurus Conch.* ii. pl. 181. f. 118; Reeve, *Conch. Icon.* xv. f. 48, *a, b*.

Hab. San Christoval, Solomon Islands (*Brazier*); Philippine Islands, (*Cuming*).

72. *C. ROSTRATUM*, Sowerby, *Thesaurus Conch.* ii. pl. 180. f. 104; Reeve, *Conch. Icon.* xv. f. 95, *a, b*.

Hab. San Christoval, Solomon Islands (*Brazier*); Philippine Islands & Lord Hood's Island (*Cuming*); Sandwich Islands (*Pease*); Red Sea (*MacAndrew*).

The Solomon-Islands specimen differs from the type of this species in the absence of the spiral lines between the ribs, which are prominent and agree in this respect with some examples from the Gulf of Suez, collected by and presented to the Museum by the late Robert MacAndrew.

73. *C. RUGOSUM*, Wood, Sowerby, *Thesaurus Conch.* ii. pl. 183. f. 195, 197; Reeve, *Conch. Icon.* xv. f. 45, *a, b*.

Hab. Bonham Island, Marshall group (*Brazier*); Philippine Islands (*Cuming*); Red Sea.

The shells from the Marshall Islands are dwarfs in comparison with the Philippine and Red-Sea specimens; in all other respects they are identical. Length 12 mill., diam. 5.

74. *C. NASSOIDES*, Sowerby, *Thesaurus Conch.* ii. pl. 183. f. 200, 201; Reeve, *Conch. Icon.* xv. f. 83, *a, b*.

Hab. San Christoval, Solomon Islands (*Brazier*); Sandwich Islands (*Newcombe*).

Not only between the plications at the suture and on the labrum is this species painted; for in specimens in fine condition nearly the whole surface is dotted minutely with brown.

75. *C. LACTEUM*, Kiener, *Cog. Viv.* pl. 7. f. 3; Sowerby, *Thesaurus*, ii. pl. 184. f. 213, 214; Reeve, *Conch. Icon.* xv. f. 85, *a, b*.

Hab. San Christoval, Solomon Islands (*Brazier*); Philippine Islands (*Cuming*).

76. *C. EGENUM*, Gould, *Proc. Boston Soc. Nat. Hist.* vol. iii. 1849; *Atlas United-States Explor. Exped.* (Wilkes), pl. x. f. 171; *Otia Conchol.* p. 62.

Hab. San Christoval, Solomon Islands (*Brazier*); Wilson's Island (*Gould*).

The little shell which I associate with this species, agrees very well with Gould's description, with the exception that the spiral liration which is situated a little above the middle of the whorls, and is larger than the others, is decidedly nodulous; and that at the suture is also nodulous, the nodules of the latter being smaller than those of the former. The figure given by Gould is not good, as it does not show the little dark-brown spots which exist around the lower portion of the body-whorl.

77. *VANIKORO ACUTA*, Récluz, var.—*Narica acuta*, Récluz, *Mag. de Zoologie*, 1845, p. 60, pl. 133. f. 1, 2.

Hab. San Christoval, Solomon Islands (*Brazier*); "Lord-Hood Island, Moluccas, and Cape Natal" (*Cuming*).

The single example from the Solomon Islands differs somewhat from the types of this species. The umbilicus is narrower, and the spiral sculpture rather coarser, and the striæ more deeply incised.

78. *NERITINA SIDEREA*, Gould, *Proc. Boston Soc. Nat. Hist.* 1847, vol. ii.; *Otia Conchol.* p. 48; *Reeve, Conch. Icon.* ix. f. 171, *a, b.*—*Neritina dispar*, Pease, *American Journ. Conchol.* vol. iii. p. 285, pl. xxiv. f. 3.

Hab. San Christoval, Solomon Islands (*Brazier*); Feejees (*Gould*).

The two specimens from San Christoval are very large, measuring eleven millims. in length, and are much paler in colour than the typical form. The fine longitudinal wavy lines (not mentioned by Gould) are somewhat distant; the white triangular spots, which are shaded on the left with purple black, are rather large; and the last whorl is encircled near the middle with two indistinct bands of the same colour. From the series of this species in the Museum collection, it would appear that the smaller the specimen the blacker it is and the white spots fewer.

79. *LIOTIA CIDARIS*, Reeve.—*Delphinula cidaris*, Reeve, *Conch. Icon.* i. f. 27.

Hab. San Christoval, Solomon Islands (*Brazier*); Philippine Islands (*Cuming*).

80. *L. DISCOIDEA*, Reeve.—*Delphinula discoidea*, Reeve, *Conch. Icon.* i. f. 15, *a, b.*

Hab. San Christoval; Philippine Islands (*Cuming*).

81. *LIOTIA CRENATA*, *Kiener*.—*Delphinula crenata*, *Kiener*, pl. 4. f. 8; *Reeve, Conch. Icon.* i. f. 19, *a, b*.

Hab. San Christoval (*Brazier*); Philippine Islands (*Cuming*).

82. *ADEORBIS TENUILIRATA*, sp. nov. Pl. XXX. fig. 18.

Testa minuta, orbicularis, depressa, tenuis, umbilicata, flavescens, lineis interruptis olivaceo-nigris et maculis radiantibus ejusdem coloris infra suturam ornata, versus apicem purpurascens, et circa umbilicum sordide alba; anfractus 4 convexi, rapide accrescentes, sutura subprofunda sejuncti, liris spiralibus tenuibus cincti, incrementi lineis oblique striati; apertura magna, subcircularis, ad basim recedens, albida lineis exterioribus variegata; columella aliquanto expansa et reflexa; peristoma interruptum, marginibus callo brevissimo junctis. Alt. $2\frac{1}{3}$ mill., diam. max. 3, min. $2\frac{1}{2}$. Operculum tenuissimum, pallide corneum, extra concavum.

Hab. San Christoval, Solomon Islands.

The spiral liræ which encircle the body-whorl around the middle, are stouter than the rest; and those beneath are very fine indeed. As these lirations are rather close together and interruptedly of a dark olive-colour, the shell displays more of this tint than of the yellowish ground-colour.

83. *TROCHUS (CLANCULUS) BATHYRHAPHE*, sp. nov. Pl. XXX. fig. 17.

Testa depresso conica, basi complanata, olivaceo-viridis, ad apicem viridis, granulis saturate fuscis ornata, sublata umbilicata; anfractus $5\frac{1}{2}$ convexi, sutura anguste canaliculata sejuncti, liris granosis (in anfr. penult. 7, suprema longe maxima) ubique cincti; anfr. ultimus ad peripheriam rotunde angulatus, granulorum seriebus circiter 14 cinctus; umbilicus albus, lira alba granulifera circumdatus, intus lira simplici ornatus; apertura obliqua, pulcherrime margaritacea, intus lirata; labrum exterius margine crenulato, ad basim fortiter liratum; columella superne anfractui juncta, obliqua, inferne dentata. Alt. $6\frac{1}{2}$ mill., diam. maxima $8\frac{1}{2}$, min. $7\frac{1}{2}$.

Hab. San Christoval, Solomon Islands.

Perhaps the nearest ally of this species is *Cl. atropurpurea* of Gould. From that species, however, it may easily be distinguished by its difference of colour, channelled suture, more rounded spire and the peculiarity of the umbilicus. The main colour of *C. bathyrhappe* is a very dark olive-green, the apex being bright green; the granules of the infrasutural series, which are considerably larger than the rest, are dark brown at intervals, two or three together being of this colour, and those between them of the same hue as the shell. The granules on the base are subalternately reddish brown and greenish.

84. *T.* (*CLANCULUS*) *ATROPURPUREUS*, *Gould*.—*Trochus* (*Mono-donta*) *atropurpureus*, *Gould*, *Boston Soc. Nat. Hist. Proc.* 1849; *Otia Conchol.* p. 59; *Atlas to Wilkes United-States Explor. Exped.* pl. xiii. f. 224, *a-e*.

Hab. San Christoval, Solomon Islands (*Brazier*); Tutuila, Navigators' Islands (*Gould*).

The dentate margin of the umbilicus is very characteristic in this species; it is white, and the large tooth on the upper side is very constant. The interstices between the series of granules are generally of a darker colour than the granules themselves; and sometimes the apex is of a rose-colour.

85. *TROCHUS* (*GIBBULA*) *SUPRAGRANOSUS*, sp. nov. Pl. XXX. fig. 15. Testa solida, depresso globosa, anguste sed profunde perforata, pallida, strigis latis radiantibus aliquanto interruptis fuscis vel rosaceo-fuscis ornata; anfractus 5 convexiusculi, sutura profundiuscula sejuncti, liris spiralibus versus apicem granosis (in anfr. penult. 4-5) cincti; anfr. ultimus medio rotundatus inferne convexiusculus, liris circiter 20, irregulariter præsertim prope medium in paribus, ornatus, paululum pone labrum macula magna fusca vel roseo-fusca notatus; apertura parva, circularis, intus argenteo-margaritacea, prope marginem labri alba, et (in exemplis adultis), tenuiter lirata; labrum crassum margine acuto; columella arcuata, superne levissime reflexa. Alt. 5 mill., diam. maxima 5, minima $4\frac{1}{3}$.

Hab. San Christoval, Solomon Islands.

One of the chief peculiarities of this species is that the spiral liræ on the last whorl near the middle run in pairs. The lirations on the spire become granulous as the apex is approached. The brown or pinkish-brown stripes which flow downwards from the suture are interrupted somewhat by the transverse sulci, and thus appear as oblong dots on the liræ. On the back of the body-whorl, not far from the labrum, is a large brown or pinkish-brown stain.

86. *T.* (*CANTHIRIDUS*) *HUTTONII*, sp. nov. Pl. XXX. fig. 20.

Testa breviter conica, obtecte perforata, cæruleo-nigra vel purpureo-nigra, ad apicem detritum albida; anfractus 5-6, convexiusculi, striis spiralibus circiter 7-8 incrementique lineis sculpti; anfr. ultimus ad peripheriam obtuse angulatus, inferne convexiusculus, in regione umbilicali levissime impressus; apertura subcirculari-quadrata, intus iridescens, tenuiter sulcata; labrum intus paululum incrassatum, albescens, anguste nigro limbatum; columella parum arcuata, incrassata, perforationem tegens. Alt. $14\frac{1}{2}$ mill., diam. $10\frac{1}{2}$. Exempli minoris alt. 9 mill., diam. 7.

Hab. New Zealand.

Care must be taken not to confound this species with one or two others which are found from the same locality. *C. tenebrosus*, described by A. Adams in the Proc. Zool. Soc. 1851, p. 170, is a narrower and more coarsely sulcated species than the present; and a second species (at present undescribed) is closely allied; it is umbilicated more broadly, spirally sulcated, and not so dark in colour, being of a pale purplish tint with the spiral liræ between the sulcations of a darker tint. Neither *Canthiridus tenebrosus*, A. Adams, nor *C. rufozona* (also from New Zealand, and of the same author) appear in Hutton's Catalogue of the Marine Mollusca of that country, probably owing to their being published without localities. I feel much pleasure in dedicating this species to the author of the above very useful Catalogue.

87. *TROCHUS (EUCHELUS) ALVEOLATUS*, A. Adams.—*Monodonta alveolata*, A. Ad. Proc. Zool. Soc. 1851, p. 176.

Hab. San Christoval (*Brazier*); Philippine Islands (*Cuming*).

This is a very pretty species, and of the following dimensions—length, $12\frac{1}{2}$ millims., diam. 9. The spiral granular liræ are six on the penultimate, and about twelve on the last whorl. The whorls are seven in number, somewhat convex, and divided by a deeply but narrowly channelled suture. They have no longitudinal liræ between the three upper series of transverse nodules (which is not stated in Adams's very loose description), but are only obliquely striated in this region. Only the lower half of the whorls has a cancellated aspect. The longitudinal brown markings are broadest at the suture, and not interrupted by the transverse sulci on the upper part of the whorls; but beneath they appear on the granose lirations in small spots.

88. *STOMATIA ANGULATA*, A. Adams, Proc. Zool. Soc. 1850, p. 34; *Sowerby's Thesaurus Conchyl.* ii. pl. 175. f. 57; *Reeve, Conch. Icon.* vol. xix.

Hab. San Christoval, Solomon Islands (*Brazier*); Philippine Islands (*Cuming*).

As might be supposed from Mr. Adams's description, this species is not uniformly "green." It is generally of a grey- or sage-green; and on the lower half of the body-whorl there are some narrow radiating undulating pale stripes. The specimen from the Solomon Islands is of a luteous colour above, and tinged with greenish ash beneath, with the slender pale stripes, and everywhere it is most minutely dotted with black upon the spiral lirations.

89. *STOMATELLA HALIOTOIDEA*, Sowerby, *A. Adams in Sowerby's Thesaurus Conchyl.* ii. p. 837, pl. 154. f. 10, 11.

Hab. San Christoval, Solomon Islands (*Brazier*); Philippine Islands (*Cuming*).

The shell sent by Mr. Brazier is of a uniform olive-green, and dirty white in the umbilical region, and dotted with white upon the spiral liræ. These are subequidistant and very fine; and between them the shell is very finely spirally striated.

90. *EMARGINULA VARIEGATA*, *A. Adams, Proc. Zool. Soc.* 1851, p. 84; *Sowerby, Thesaurus Conchyliorum*, iii. pl. 245. f. 9, 10; *Reeve, Conchol. Icon.* vol. xix.

Hab. San Christoval, Solomon Islands (*Brazier*); Philippine Islands (*Cuming*); Australia (*Sowerby*).

The species is described by Adams as "albida, rufo-fusco variegata," and by Sowerby as "alba griseo variegata;" and the figure in the 'Thesaurus' represents it as white, variegated with pinkish purple, with darker spots on the ribs. The latter coloration agrees best with certain specimens in the Museum; and others are almost entirely of an obscure purplish tint, with scarcely any white markings. The specimens from the Solomon Islands are dirty white, with most of the radiating ridges of a blackish colour, and very finely granose.

91. *TELLINA CHRISTOVALIS*, sp. nov. Pl. XXX. fig. 22.

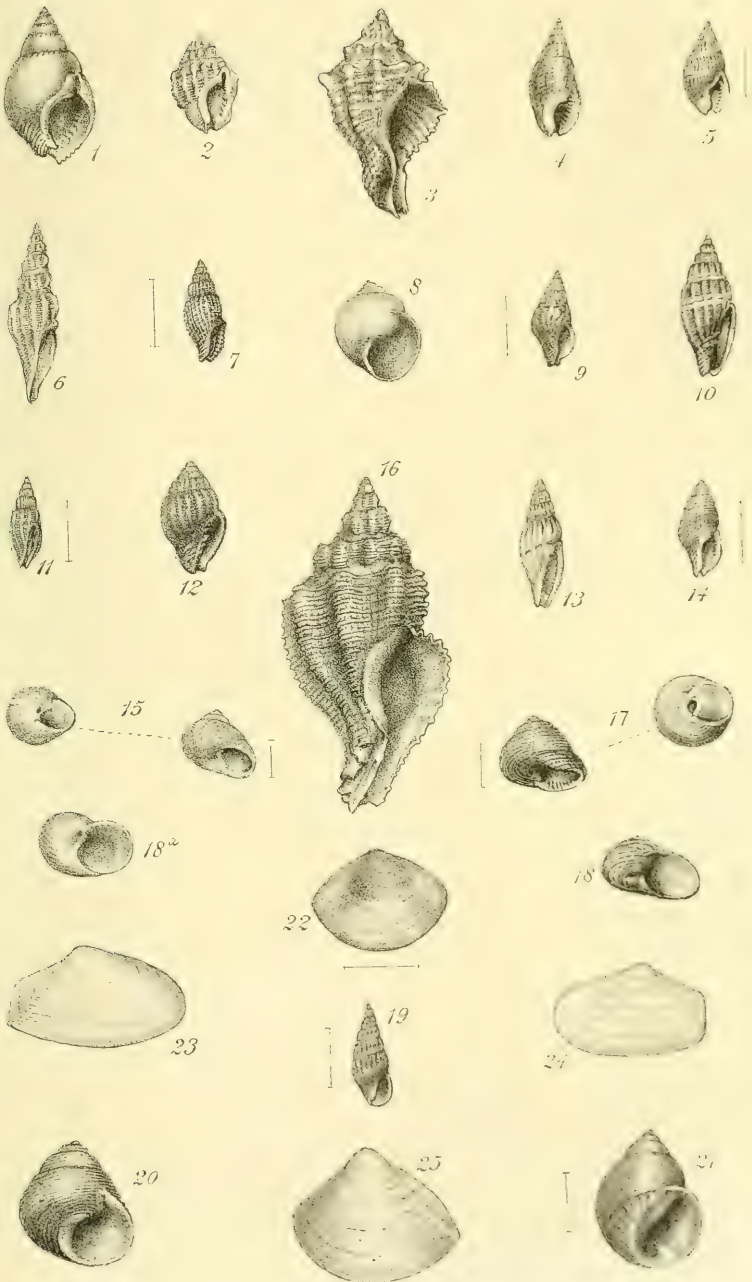
Testa æquilateralis, æquivalvis, rotunde subtriangularis, aliquanto tumida, alba, macula rufescente magna subtriangulari versus umbones picta, polita, concentrice tenuiter striata; margo dorsalis utrinque valde declivis, et paululum arcuatus, ventralis arcuatissimus, postice levissime sinuatus. Long. $7\frac{1}{3}$ mill., lat. 9, crass. $4\frac{1}{2}$.

Hab. San Christoval, Solomon Islands.

There is a single specimen of this little species in the Cumingian collection from Upolu, which is a trifle larger than the above dimensions, but agreeing in all other respects with that from San Christoval. The reddish spot, which is somewhat triangular in form, and stains the valves towards the umbones, is also seen within them. The shining surface is slightly prismatic in certain lights.

92. *THRACIA ANGASIANA*, sp. nov. Pl. XXX. fig. 23.

Testa alba, tenuis, inæquivalvis, ovato-oblonga, postice angustata et rotunde truncata, mediocriter inæquilateralis, concentrice tenuiter striata, obscure et minutissime granosa; margo dorsalis antice arcuatus, postice decliviter rectiusculus, ventralis antice arcuatus,



postice rectiusculus; latus anticum rotundatum, latum. Lat. 23 mill., long. 14, crass. $6\frac{1}{2}$

Hab. Sow-and-Pigs Reef, Port Jackson.

The granulation of the surface is so minute as scarcely to be noticeable with the aid of a simple lens; and consequently the valves appear to be but concentrically striated. The posterior end of this species is narrower than the anterior, whilst in *Jacksoniana* it is broader.

93. *THRACIA JACKSONIANA*, sp. nov. Pl. XXX. fig. 24.

Testa alba, ovato-oblonga, postice biangulata, rotunde truncata, antice aliquanto angustata et rotundata, subæquivalvis, paululum inæquilateralis, concentricè leviter plicata, ubique minute granose striata; margo dorsalis utrinque valde declivis leviter convexiusculus, ventralis parum arcuatus; valvæ intus tenuiter radiatim striatæ; impressio pallii lata, haud maxime profunda. Lat. 21 mill., long. $12\frac{1}{2}$, crass. 8.

Hab. Sow-and-Pigs Reef, Port Jackson.

This species is almost equilateral, but a trifle longer anteriorly. The surface of the valves is irregularly and rather distantly concentrically plicated, and also most minutely granosely striated in the same direction. Down the posterior portion of the valves from the umbo to the obtuse angle at the conjunction of the lateral and ventral margins there radiates a slightly raised elevation or keel; and a second one is observed near the dorsal slope.

94. *CARDITA BIMACULATA*, *Deshayes*, *Proc. Zool. Soc.* 1852, p. 102, pl. xvii. f. 4, 5.

Hab. Tasmania (*Brazier*); New Zealand (*Deshayes*).

The shells from Tasmania are white beneath the dirty brown epidermis, and spotted irregularly with red upon the granose ribs. Besides the two brown spots on the muscular scars in each valve, there are two elongate marks of the same colour, one on each side of the umbo, in the region of the lunule and dorsal ligament.

95. *CARDIUM (FRAGUM) MUNDUM*, *Reeve*, *Conchologia Iconica*, ii. f. 125.

Hab. Arrowsmith Island, Marshall Group (*Brazier*); Lord Hood's Island (*Cuming*).

The specimens of this beautiful species from Arrowsmith Island have a few sanguineous spots on the angles of the valves, and are also stained with the same colour between the lovely im-

bricated ribs on the posterior slope. The ground-colour of these shells is yellow; and they are dotted with opaque white.

EXPLANATION OF PLATE XXX.

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| Fig. 1. <i>Nassa bicallosa</i> . | Fig. 14. <i>Pisania solomonensis</i> . |
| 2. <i>N. trinodosa</i> . | 15. <i>Trochus (Gibbula) supragranosus</i> . |
| 3. <i>Fusus imbricatus</i> . | 16. <i>Fusus Brazieri</i> . |
| 4. <i>Nassa Marratii</i> . | 17. <i>Trochus (Clanculus) bathyrhaphe</i> . |
| 5. <i>N. interlirata</i> . | 18, 18 a. <i>Adeorbis tenuilirata</i> . |
| 6. <i>Pleurotoma (—?) solomonensis</i> . | 19. <i>Rissoina terebroides</i> . |
| 7. <i>Clathurella immaculata</i> . | 20. <i>Trochus (Cantharidus) Huttonii</i> . |
| 8. <i>Recluzia (?) globosa</i> . | 21. <i>Littorina melanacme</i> . |
| 9. <i>Columbella Carolinæ</i> . | 22. <i>Tellina christovalis</i> . |
| 10. <i>Mitra (Turricula) rufofilosa</i> . | 23. <i>Thracia Angasiana</i> . |
| 11. <i>Cythara interstriata</i> . | 24. <i>T. Jacksoniana</i> . |
| 12. <i>Mitra (Turricula), var. ficulina</i> . | 25. <i>Maetra pinguis, var.</i> |
| 13. <i>Cythara unilineata</i> . | |

On the Introduction of Trout and Tench into India.

By FRANCIS DAY, Esq., Surgeon-Major, F.L.S.

[Read April 6, 1876.]

DURING the last few years three attempts have been made to introduce European fish into the rivers and tanks on the Neilgherry Hills in the Presidency of Madras. It may now be assumed that at any rate the Trout (*Salmo leuvenensis*) and the Tench (*Tinco vulgaris*) have bred there, and may prove an eventual success.

The first trial was made by Mr. Thomas, of the Madras Civil Service, who took out a few hundred trout-ova in the 'Ripon' in 1863. From various causes they died prior to reaching India.

In 1866 I made the second attempt. The eggs were obtained for me by Mr. Frank Buckland, and were in an excellent state when packed. This process was performed by myself, as I had previously been instructed by Mr. Youl; and six small boxes of ova were placed, February 2nd, in the ice-room of the P. & O. steamer 'Mongolia' at Southampton. On March 12th, they were landed at Madras. On the 14th they reached the Government Gardens at Ootacamund, where the Superintendent, Mr. M'Ivor, had prepared a very suitable house for their reception. Through it flowed a stream of clear water. Things went on pretty well for